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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,633	07/08/2002	Wilhelm Ansorge	100564-00103	1909

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EXAMINER

RILEY, JEZIA

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,633

Applicant(s)

ANSORGE ET AL.

Examiner

Jezia Riley

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
4a) Of the above claim(s) 21-46 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8,10-20,47 and 48 is/are rejected.
- 7) ☒ Claim(s) 4 and 10 is/are objected to.
- 8) ☒ Claim(s) 1-48 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Remarks

1. Applicants' arguments and amendments, filed on 7/6/04, have been approved and entered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either newly applied or reiterated. They constitute the complete set presently being applied to the instant application.

Claim Objections

2. Claims 4 and 10 are objected to because of the following informalities: The R denoting isocyanate and isothiocyanate groups should be deleted since said group gave been deleted from independent claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-6, 8, 10-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hogan et al. (WO97/18226).

The reference discloses immobilization of biopolymers on solid phase comprising a solid phase which contains an epoxide which can react with amino groups and which

can react with a biopolymer comprising a reactive amino group. (see pages 10, 16-20 and figures 2C,13-17).

It discloses an hybridization device comprising an oligonucleotide probe, and a solid substrate, said solid substrate having a support surface with a neutral or negative electrostatic field and having a hybridization surface wherein said hybridization surface is accessible for linking said oligonucleotide probe to said solid substrate and wherein said oligonucleotide probe is linked to the hybridization surface of said solid substrate at a distance of no more than about 100 angstroms. (page 4-5). In a specific embodiment the hybridization surface is comprised of two or more different compounds.

Example 12 shows that the NH₂ is linked at the 3' terminal of the nucleic acid. Another specific embodiment includes a method for detecting single base difference in a target area of a strand of DNA or RNA comprising mixing a hybridization device with DNA or RNA containing the target area to be detected; allowing sufficient time for the target area to hybridize to the hybridization device; altering the environment of the hybridization probe and DNA or RNA target area to remove non-hybridized DNA or RNA; and detecting the DNA or RNA hybridized to the hybridization device. (page 6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 20, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan et al. (WO97/18226) in view Lipshutz et al. (Biotechniques Vol. 19, No. 3 1995, pp. 442-447).

Hogan discloses immobilization of biopolymers on solid phase comprising a solid phase which contains an epoxide which can react with amino groups and which can react with a biopolymer comprising a reactive amino group as discussed above.

Lipshutz describes using oligonucleotide probe arrays to access genetic diversity.

Therefore it would have been obvious at the time the invention was made to use the method of Hogan for the gene expression determination since Lipshutz discloses that oligo probe arrays display specific oligonucleotide probes at precise location in a high –density, information-rich format. The hybridization pattern of a fluorescently labeled nucleic acid target is used to gain primary structure information of the target.

This format can be applied to a broad range of nucleic sequence analysis problems including pathogen identification, polymorphism detection, human identification, mRNA expression monitoring and de novo sequencing (see pages 442, 445-446).

7. Claims 2, 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


8. Claim 9 is allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jezia Riley whose telephone number is 571-272-0786. The examiner can normally be reached on 9:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thursday, September 02, 2004



JEZIA RILEY
PRIMARY EXAMINER